



inps journal

Indiana Native Plant Society

Spring 2023

Donaldson's Woods – An Indiana Natural Gem

By John Bacone

Every resident of Indiana lives within a one-hour drive of one of the two dozen state parks. Each park harbors unique natural features and

perhaps cultural or historical features as well. Given this diversity, it is difficult to single out a single park as best, but the 1358-acre Spring Mill State Park in Lawrence County ranks high on the list of many Hoosiers.

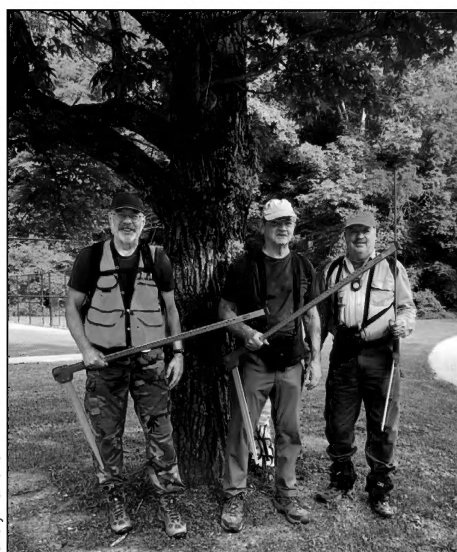
The pioneer village restored in 1914 is likely the most famous feature of Spring Mill State Park. The village lies in a glen with several streams that come gushing out of the hillside – an amazing sight. The largest stream drives a large water wheel used for grinding grain. The magical streams highlight a second noteworthy aspect of the park, namely its karst topography. The entire

area is underlain with limestone strata that contain numerous caves and forms sinkholes, places where a cave roof has collapsed leaving a depression on the land surface. These sinkholes can number in the many hundreds in a square mile in and around the park.

To leave the best for last, the park includes Donaldson's Woods Nature Preserve, one of a handful of old growth forests remaining in Indiana. The undisturbed forest is rich in ferns, with at least 14 species. One finds a panoply of spring ephemerals, including members of the violet family such as Eastern green-violet (*Cubelium concolor* formerly *Hybanthus c.*), three-lobed violet (*Viola palmata*), and bird-foot violet (*V. pedata*). Especially showy in spring is

shooting-star (*Primula meadia*). And of course, the woody flora is not only rich but contains magnificent mature trees.

In *Deciduous Forests of Eastern North America*, the eminent forest ecologist E. Lucy Braun calls Donaldson's Woods a "white oak forest type, in appearance." She notes that most of the very large trees are white oak



Cheryl LeBlanc

It takes large calipers to measure large trees! The sampling crew (left to right) consists of Dave LeBlanc, Tom Hulvershorn, and John Bacone.

Inside

Conservation	14
In Memoriam	16
INPS at Work	9
Insect Partners	4
Invasive Species	3
Native Plant Profiles	6, 7
Native Plants and Me	12-13
Natural Area Profile	1
Photo Contest	10-11

(*Quercus alba*), that very few of the large trees are American beech (*Fagus grandifolia*), and that the understory has large amounts of sugar maple (*Acer saccharum*). She concludes that this forest "does not appear to be climax¹ for the region; rather it is a mixed forest of a character transitional between mixed-mesophytic² [prominent further to the east] and oak-hickory".

Donaldson's Woods has added significance: it is one of a few old growth forests in the country that has been consistently monitored for a long period of time. Beginning in 1954, the late Father Damien Schmelz and his colleagues conducted a 100% census of a portion of the woods, measuring every tree over 4" in size, and recording the species and diameter at breast height. They then re-sampled it every 10 years for the next 5 decades. It was last sampled in 2004. In their sampling reports, which they published in the Proceedings of the Indiana Academy of Science, they confirmed Lucy Braun's

Donaldson — continued on next page

Donaldson — continued from front

observations. There was very little reproduction of white oak in the understory, and high numbers of small beech and sugar maple trees.

In June of 2022, Donaldson's Woods was resampled. A crew led by Dave and Cheryl LeBlanc of Ball State University (BSU), along with a number of volunteers that included Department of Natural Resources retirees, staff from Divisions of Nature Preserves and State Parks, and BSU grad student Matt Golub completed the project in six hot, sticky days. Initially, the corners of the 18-acre

sampling area were located by Brian Abrell and John Bacone, who gridded the perimeter by installing 1 inch poly pipes every 100', giving the plot a dimension of 650' by 1350', and eventually subdividing it into 100' by 100' subplots. Then the sampling crew began measuring all trees 4" in diameter in each 100' by 100' subplot. As each tree was measured, the species and diameter were recorded, and the tree was marked with pink chalk, to ensure all trees were measured only once.

This has resulted in a sampling record spanning seven decades. Matt Golub will analyze the data for his Master's Thesis and provide detailed information regarding the composition and trends for all tree species found in Donaldson's Woods. While we eagerly await the official results of Matt's work, there are a number of general observations to report. The crew measured 1,484 individual trees within this 18-acre plot. These included 21 different species of tree. About 11% of the trees measured were over 2' in diameter. In fact, 121 were over 2' in diameter, 37 were over 3' in diameter, and four were over 4' in diameter. The large trees were primarily white oak but did include nine additional species. Other large specimens included tulip poplar (*Liriodendron tulipifera*),

American beech, red oak (*Quercus rubra*), black oak (*Q. velutina*), and several species of hickory (*Carya* spp.).

Overall, sugar maples comprise nearly 42% of all the trees measured, and American beech comprises 25%, suggesting that more individuals of these species are maturing past the seedling/sapling stage. Twelve percent of the trees were white oak, and the other 18 tree species account for the remaining 21%. As ecologists have noted over the years, there are virtually no white oak seedlings and saplings in the understory, and hence, eventually this old growth white oak-dominated woods will probably become an old growth beech-maple forest, or perhaps a forest of mixed-mesophytic composition. But for now, this woods continues to be dominated by many large white oak trees!

Your spring itinerary should include a visit to Spring Mill State Park. After you enjoy the pioneer village, hike Donaldson's Woods and experience a scene much as early European settlers might have seen — one rich in ferns, spring wildflowers, and mature trees. And yet, following a slow rhythm of natural forest maturation, the community continues to change in subtle ways that take a lifetime and careful measurements to appreciate.

Footnotes

¹ climax — the final stage of community development in the process of ecological succession. Barring physical disturbance, this is the equilibrium community type for a region.

² mesophytic — a plant community that does not experience flood conditions but requires somewhat uniform moisture levels. The mixed mesophytic forest community has a high diversity of deciduous tree species.

John Bacone, a member of the Central Chapter of INPS, is the retired Director of the Indiana DNR Division of Nature Preserves. He notes that his colleagues at the Division of State Parks supplied food and lodging during the study of Donaldson's Woods. The Sam Shine Foundation provided generous funding for the volunteers' travel and for the future costs of preparing and publishing the final results. An interim presentation of the data recently took place at the annual conference of the Indiana Academy of Science.



Cheryl LeBlanc

In order to systematically sample the trees in Donaldson's Woods, the corners of the 100' by 100' subplots were marked by 1" pipe supporting a bamboo pole and flag.

When INPS Members and Businesses Work Together, Good Things Happen

By Janet Canino, Ph.D.

This could be a tale of how social media can be used for good. Or a story about the power of a few making a positive difference in the world. Others may read this and see it as an example of a corporation doing right by its customers. Whichever way you see it, the end result remains the same. Come this spring, there will be one less outlet in Indiana where people might buy invasive callery pear (*Pyrus calleryana*) trees and we can thank the Michigan-based Family, Farm, & Home stores and our fellow INPS members for that.

How did such a native plant victory come about?

In early April of 2022, I was doing what I do most weeknights, trying to tire out my young Golden Retriever, while also waiting for my teenage daughter to finish her taekwondo class. The taekwondo school is inside of a small commercial area and at the far end sits a Family, Farm, & Home (FF&H) store. Their new inventory of trees and shrubs had arrived.

Since a pallet of trees is fabulous dog-sniffing material, we wandered over to check it out. Maya, the Golden, was practically euphoric over all the great smells. My experience, unfortunately, was quite different from hers; I was disappointed by what I was seeing.

Sadly, just as I had seen the year before when we made the rounds of landscape trees for sale, I spied many a Cleveland Select flowering pear (*P. calleryana*) tag hanging from the trunks. That meant more invasive trees getting ready to do their damage as people unknowingly bought them for their landscapes. I took a photo of a tag and shared it with a few native plant enthusiasts, as a way to temper my disappointment and frustration.

In 2021, when I first saw the invasive trees for sale there, I had called our local FF&H store and asked that FF&H not sell invasive trees. I was told that the individual stores are not the inventory decision-makers and that they had no control over what species end up on their lot. At the time, I did not know what more to do and so dropped the issue. It was the best effort I could give at the time.

Seeing the harmful Cleveland Select pear trees in 2022, though, led me to wonder what more I could do. Creating change means inspiring people to take action, which is not always a simple or easy task. I recalled that there are some action-oriented people in the INPS Facebook group

that might be up for this. So on April 13th, 2022, I posted the photo to the FB group and asked that people send respectful comments to the FF&H Facebook page alerting them that they were (likely inadvertently) contributing to an important environmental problem by selling invasive trees.

I got a quick and polite response from the store's FB page saying they would share this feedback with their live buyer. Moreover, fellow INPS members commented that they had contacted the business. Four days later FF&H confirmed they had heard our concerns and, moreover, taken them seriously. They would no longer be selling invasive Cleveland Select trees!

Wow. I was impressed not only with other people who took a few minutes out of their day to take action and politely share their concerns, but also with a business that was willing to be open-minded and reconsider their buying practices. FF&H has 70 stores in five states, so besides making a positive difference in Indiana, these actions help Michigan, Ohio, Maryland, and Pennsylvania customers.

This example seems to embody the saying attributed to the anthropologist Margaret Mead to, "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has." Furthermore, FF&H's decision reminds us that sharing our concerns respectfully and being open to new information can lead to amazing results. It takes courage to change and to look for wisdom in the words of others.

Maybe this article will inspire you to call or message a business near you that sells invasive species. Maybe it will encourage you to talk with your local library or school and see if they will use native species in their next landscaping project. And maybe it will remind each of us that being kind does not mean our voices need to go unheard. Indeed, when you share your wisdom respectfully, you may discover it is simply a case of people not knowing that there is a better way. My thanks to Family, Farm, & Home for pursuing that better way.

Janet Canino, a co-founder of the NE INPS chapter and an IN Master Naturalist, can be found outside daily, usually with her Nikon camera in one hand and a leash in the other, trying unsuccessfully to wear out Maya, the nearly-inexhaustible Golden Retriever.



Janet Canino

*A thing of the past!
This product is no
longer available at
FF&H stores.*

Violets and Their Insect Pollinators and Grazers

By Stephanie Frischie

The violet genus (*Viola* spp.) in Indiana has over 20 species (not counting hybrids) that occur in a broad spectrum of habitats – woodlands, fens, prairies, sidewalk cracks, compacted soils, and some lawns.

Among these many species one finds a range of feeding and symbiotic interactions. Some of these interactions are casual, i.e., carried on by a range of plant species, others are quite specific and result in the violet being crucial to the success of some insect species in our Indiana ecosystems.

With respect to flower types and pollination, most violet species have flowers that are chasmogamous, i.e., they are open and attract pollinators in order to ensure a level of outcrossing by pollen from other conspecific plants. In

on visiting violets (Wheeler 2017). Thus, it is described as having an oligolectic diet. Some flies and butterflies also visit violet flowers and contribute to pollination as well. Potentially even an ant species, the sugar ant (*Tapinoma sessile*), performs this service as it gleans nectar from striped cream violets (*V. striata*). Flowers provide nectar as the main reward for pollinators, but research in Brazil has shown that for many violet species there, pollen is the primary reward instead of nectar. Here in North America we know of one pollen feeder, a weevil, *Centrinetes strigicollis*, that visits violet flowers. Given its sluggish movements it may merely serve to aid in self-pollination. Of course, many violet species produce cleistogamous flowers as well as chasmogamous flowers. These closed flowers are self-fertilizing and thus are not dependent upon attracting an insect pollinator.

There are insect groups that are noteworthy herbivores on violet leaves, flowers, and stems. Several flies, such as *Galiomyza violivora*, are leaf miners, where the larvae feed inside the leaves, chewing out a path in front of them, and leaving a tell-tale winding track of clear, dead cells that contrasts with the rest of the leaf's green surface. Plants typically can withstand normal levels of feeding by leaf miners. A showy black and white moth called the giant leopard moth (*Hypercompe scribonia*) may also seek out violets in its caterpillar stage as part of a broad dietary menu. But perhaps the most familiar insect herbivore of violets are fritillary butterflies. The larvae of many species of fritillaries feed solely on their violet host plants (Wheeler 2017), making them as selective as the monarch butterfly (*Danaus plexippus*) is to milkweeds (*Asclepias* spp.). In Indiana, these include great spangled fritillary (*Speyeria cybele cybele*) and meadow fritillary (*Boloria bellona bellona*), both common throughout the state in anthropogenic and woodland environments. In northern Indiana, aphrodite fritillary (*Speyeria aphrodite*) occurs in savannas, prairies, and woods while silver-bordered fritillary (*Boloria selene myrina*) are in fens and wet prairies. The variegated fritillary (*Euptoieta claudia*) doesn't survive Indiana winters but adults spread across Indiana from

— continued at right

Paul Rothrock



The widespread great spangled fritillary, here nectaring on butterfly milkweed (*Asclepias tuberosa*), uses common blue violets (among others) as its larval host.

Lee Casebere



The rare regal fritillary of our Midwestern prairies has dark hind-wings. The orange spots on the hind-wings indicate that this individual is a male.

Indiana the primary pollinators of violets are bees in the family Andrenidae, bumble bees (*Bombus* spp.), and orchard bees (*Osmia* spp.). Laura Rericha reports a dozen species from these insect groups that visit violet flowers (Wilhelm & Rericha 2017). One of the mining bees, *Andrena violae*, specializes

the south each summer. The regal fritillary (*Speyeria idalia*) is a true prairie butterfly, dependent on the violets of prairies as its larval food. These include arrow-leaf violet (*Viola sagittata*), bird-foot violet (*Viola pedata*), and prairie violet (*Viola pedatifida*). The destruction and loss of large, open, prairies in Indiana and the associated decline of violet species that grow in prairies, is closely tied to the current status of regal fritillaries in Indiana as a state endangered species.

For decades, conservation efforts by the Indiana Department of Natural Resources (IDNR), The Nature Conservancy (TNC), community science volunteers, and research scientists have focused on understanding the population dynamics of regal fritillaries and their host violet species. This research informs the management of preserves for these butterflies and the importance of violets and nectar plants in that management. Beginning in the spring of 2023, I will be part of a new two-year project between IDNR, TNC, and The Xerces Society to assess violet populations and habitat suitability for regal fritillaries in northwest Indiana. I look forward to sharing results from that field work in future editions of the Indiana Native Plant Society Journal.

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sapiens). Cherokee Native Americans used violets to treat colds and headaches. Foragers like to consume the edible leaves (in moderation) as a source of vitamin A and C. Others try recipes for violet simple syrup with its grape smell (see feastingathome.com/violette-syrup for more details).

Once you have a bountiful patch of blue violets, do enjoy picking a bouquet. If you give the bouquet to another, be aware of potential historical symbolism. In poetry, violets often serve as symbols of love and modesty. In the Victorian era, the language of flowers became rather formalized. The giving and receiving of flowers was a way to communicate deeper emotions. Purple violets indicated “thoughts that are occupied with love.” In more recent times, specifically due to the 1926 play by Édouard Bourdet, a lesbian character used violets to woo a lover, providing in some circles a way of communicating a particular kind of love.

While the common blue violet is easiest to grow and most readily available, several other species do appear in retail nurseries. Know your sources. Be sure that natural populations are not being disturbed to satisfy your desire to have violets “within my reach” and able to be touched.

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Paul Rothrock is an adherent member of the South Central Chapter of INPS.

*Three-lobed violet (*V. palmata*) is frequent in the southern half of Indiana but infrequent or rare northward. The midseason leaves have strong lobing.*



Paul Rothrock



*Bog white violet (*V. lanceolata*) finds a home in wet sand-prairies of northwestern Indiana and rarely elsewhere in the state.*

Indiana Violets – Not to be Missed!

By Paul Rothrock

*Within my reach!
I could have touched!*

Violets can be yellow or white in addition to blue and purple. Smooth yellow violet (*V. eriocarpa*) is a caulescent species.



Bird-foot violet (*V. pedata*) thrives on sandy-gravelly soils in the northern third of Indiana. Its large flowers make it appealing for wildflower gardens.

So begins the well-known Emily Dickenson poem entitled "Almost!" The poem is mysterious. What was missed? Maybe they are the violets that she slips into the sixth line of the poem. With the poignancy of Dickenson in mind and with spring at hand, you should not miss the opportunity to reach out and touch some of Indiana's spectacular spring wildflowers. Include in that effort the two dozen species of violets (genus *Viola*) that grace our woods, prairies, savannas, marshes, fens, and even our lawns.

The violet family has two genera in Indiana (CMH 2022). The green violet (*Cubelium concolor*, formerly *Hybanthus c.*), though, hardly looks like it belongs. Its unbranched stems grow to two feet, have numerous leaves, and bear nondescript, blandly colored flowers at the nodes. A broader geographical view reveals, however, that the family has species that range from herbs, to vines, to trees (Ballard et al. 1998). Most genera are tropical. The genus *Viola*, in particular, with over 525 species, is thought to have arisen in the Andes Mountains of South America.

Here in Indiana, our native species are perennial herbs. In addition, there are several introduced annual species. Most of our perennial

species are acaulescent, i.e., lacking above ground stems. The leaves and flower stalk arise directly from a rhizome as seen in the familiar common blue violet (*Viola communis*). About one-third of the species are caulescent. These have an unbranched stem or a stem that is only branched at the soil line. The smooth yellow violet (*V. eriocarpa*), common to mesic woods across the state, is a familiar example.

The taxonomy of the genus can get challenging (Ballard et al. 1998, Little 2022).

The evolutionary history is described as reticulate. Somewhat unrelated species may hybridize and then, through the "magic" of doubling their chromosomes (a process known as allopolyploidy), stabilize their breeding behavior. The resulting population behaves as a new species. Even if the chromosome doubling does not take place, the "willingness" to hybridize continues. An observant eye may turn-up settings where two parental species are present in adjacent habitats and hybrids occupy a transitional zone between habitats. In Indiana at least nine hybrid combinations are frequent enough that they have been assigned scientific names. *Viola × bernardii*, for example, has multiple collections from northwest Indiana.

In my childhood I fondly remember traditional lawns in my neighborhood that could have drifts of the common blue violet. It is easy to grow if you avoid using weed killer on your lawn and set your lawn mower somewhat high. You can not only enjoy its native beauty, but also some botanically fun traits. *Viola communis* is among the 90% of North American violets that are known to produce cleistogamous flowers during the summer. These flowers are hidden at ground level and never open even though they ultimately generate capsule fruits with viable seed. While still a flower bud, the male anthers split open and the pollen begins to grow its fertilization tubes toward the female stigma. Another species, sweet blue violet (*V. odorata*), doesn't even wait for the anther to open. It grows those pollen tubes right through the anther wall.

Returning to the spring season, the capsule fruits in many *Viola* species open ballistically, shooting their seeds away from the parent plant. At that point other foragers take over. Ants are particularly fond of the protein- and lipid-rich coatings on the seeds called elaiosomes. After feeding on the seed surface, ants deposit the "waste" in a midden that enhances the success of germination and seedling establishment. Other critters, too, enjoy eating the seed wholesale, including wild turkey (*Meleagris gallopavo*) and mourning dove (*Zenaidura macroura*).

Beyond the ecosystem services provided by violets one might look into their direct usefulness to the human species (*Homo*

Violets — continued on page 5

The Challenging Blue Violets

By Paul Rothrock

If one were to name an archetypal species of violet, the common blue violet (often referred to as *Viola sororia*), would win the honor. The abundance and wide distribution of the species makes it familiar to all. If one looks more closely, however, that familiarity quickly gets clouded, replaced by challenging questions ripe for a lifetime of study. As is true for the genus as a whole, "Taxonomists ... usually come to see the cloak of romantic folklore and innocence surrounding violets as sheep's clothing covering a pack of taxonomically incorrigible wolves" (Ballard 1994). It turns out that in some plant genera, *Viola* among them, delimiting the species is not straightforward. In complicated cases the taxonomist must broadly consider the pattern of traits in many populations. Many traits are visible to the naked eye but others are microscopic, chemical/genetic (DNA), and ecological (habitat). In general, this analysis ends up being years in the making.

In field guides, a typical description of the common blue violet reads: "It is quite variable, especially with regard to hairiness of its leaves. It ranges from completely smooth (known to some as smooth blue violet, *V. papilionacea*), to very hairy (hairy blue violet, *V. sororia*), and many variations in between" (Homoya 2012). My earliest introduction to the common blue violet came through the Peterson Field Guide series (Peterson & McKenny 1968). It recognized two species, a smooth one and a hairy one.

Professor Harvey Ballard at Ohio University (Athens) qualifies as the leading *Viola* expert in the nation. Early in his study of these "incorrigible wolves in sheep's clothing," he found the two species model questionable (Ballard 1994). Slowly, however, given his intensive field and herbarium work, patterns emerged. Today he finds himself following a trend in which more variants that once were considered part of *V. sororia* become clarified as distinct species. For the purposes of our Indiana audience, it turns out that the two species model works. On a broader geographical basis, however, there may be a total of seven species. The research is on-going.

Here are our two Indiana species:

Common wood violet (true *V. sororia*). This species (also known as wooly or hairy blue violet) occupies moist to mesic woodland habitats

often associated with streams and rivers, less often lawns and roadsides. It is among our most common violets across Indiana. The dull leaves have hairs ranging from few to dense, a trait that can be variable even on the same plant. The lowest sepals are oblong-ovate and have an obtuse or rounded apex and short basal lobes (auricles). Also, look for cilia on the lower half of the sepals.

Common blue violet (*V. communis*). This species (also known as dooryard violet and hooded or smooth blue violet) is the one you likely will encounter in lawns, urban woodlots, and other moist disturbance habitats. In my early learning of violets the defunct name *V. papilionacea* was applied to this species (Peterson & McKinney 1968). Compared to the hairy blue violet, the plant is shorter and has glossy, hairless leaves. The lower sepals are lance-triangular, have a long taper from near the middle and prominent auricles at their base. The sepals lack cilia on the margins. Within populations of *V. communis* one finds color forms called Confederate violets (forma *priceana*). Their flowers have a white or pale-purplish background color marked with bluish-purple streaks (nectar guides).

My thanks to Harvey for sharing a pre-publication copy of his monograph on the genus, almost 700 pages long, scheduled for release in spring of 2023 (Ballard et al. 2023). As I said, violets are not an easy group taxonomically!

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These common wood violets have dull leaves and hairy petioles and flower stalks.



An enlarged view of the sepals of the common wood violet. In this species the lowest sepals are oblong-ovate with a blunt tip. They also have cilia on the small auricle (see arrow).

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To teach people about their beauty, diversity, and importance to our environment.

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Thank You, Ellen!

What a rock star we've had as INPS president, and for an unprecedented three terms!

Ellen Jacquart stepped down in January to make way for up-and-coming rock star Coralie Palmer, but before we say goodbye, let's look at what she has accomplished.

On the statewide front, Ellen has been a steadfast champion for biodiversity. She was a founding force for the Central Indiana Land Trust in 1990 and led efforts to create a native plant nursery whose seeds continue to support our natural areas today. She drew national attention last August when the Natural Areas Association awarded Ellen their prestigious Stewardship Award for her impressive 40-year career in the conservation of natural areas [see the 2022-2023 Winter issue of *INPS Journal*].

On the home front, she has been a stalwart support to the Indiana Native Plant Society. We salute Ellen for lending a new vibrancy to our leadership, steering an enthusiastic but somewhat ungainly volunteer organization into a smoother path, not to mention her years of heading up the INPS Invasives Education team, creating the Grow Indiana Natives program leading to our Buy Natives Directory, and collaborating on a plant/pollinator database that eventually became our Indiana Native Plant Finder. Under Ellen's leadership good things happen!

At the October 2022 Annual Conference, in recognition of our affection for Ellen and her outstanding service to INPS, conference co-chair Roger Hedge gifted her an original painting by artist Mary Ann Pals depicting marram grass (*Ammophila breviligulata*), a dune grass Ellen studied in her formative years. We join Roger in a hearty Thank You, Ellen!

Ellen Jacquart continues to serve INPS as team leader for the 2023 Annual Conference. 🌿



Plant Auction: May 7 to May 13

By Melissa Moran

For a third year, the annual Plant Auction will continue with its online format in 2023. This newer virtual format has the demonstrated advantage of reaching members and non-members throughout Indiana and provides fantastic offers of unusual native plants, private garden tours, celebrity guided hikes, and choice natives from our invasive-free Grow Indiana Natives vendors.

While the Plant Auction is an important fundraiser for the Indiana Native Plant Society, it also provides an opportunity for personal connections between fellow native plant lovers. In prior years, some successful bidders have picked up their plants from the donors, visited the donor's garden, and exchanged native plant gardening tips.

The Plant Auction is only possible because of the generous donations of INPS members and supporters. Each donor will upload their plant photos or information about other native plant related items to the auction website (<https://indiananativeplants.org/native-plant-auction/>). All donated items, including plants, must be accompanied by a photo, provide the pot size (if a plant), and describe how the successful bidder should expect to claim their item (pickup at your location, shipped to their home, etc.) Donated plants must be robust and should be dug and potted several weeks before the auction date. If you have questions, please send them to auction@indiananativeplants.org.

This year, the Indiana Native Plant Society Auction will be open for online silent bidding from noon Sunday May 7 to noon Saturday May 13. Register now and plan on a week of bidding fun. Visit <https://indiananativeplants.org/native-plant-auction/>.

Melissa Moran, a member of the Central Chapter of INPS, has chaired the plant auction for two years.

The Plant Auction Committee requests donations for the auction and seeks items that serve the INPS mission "To promote the appreciation, preservation, scientific study, and use of plants native to Indiana. To teach people about their beauty, diversity, and importance to our environment."

Photo Contest

By Greg Shaner

Our INPS membership and Facebook group boast many fine nature photographers, and we always need good photos to promote the Indiana Native Plant Society on the website, in brochures, in talks, and on social media.

To serve this need, we launched the INPS Photo Contest in 2019. The contest offers an opportunity to showcase the talents of local photographers and build up a collection of excellent images to support the education and outreach efforts of INPS.

In 2023, the contest is open to the public, ages 11 and above, for prizes in the Native Plant Portrait category and Woody Natives category. We will include the Native Plant Portrait category every year, but the second category will change each year to provide new challenges for photographers.

The deadline for 2023 submissions is August 31.

2023 Contest Rules

Categories: Winners will be chosen in two categories—Native Plant Portrait and Woody Natives.

Members of the INPS Board and Council are ineligible for prizes but are welcome to submit photos for the good of the cause.

Submissions: You may enter photos in either category or both. An individual may submit up to three photos in each category. Submit each photo on a separate entry form. Images should be at least 300 pixels per inch so that they can be reproduced in print media. Submit photos at <https://indiananativeplants.org/inps-sponsored-events/photo-contest/>

Native Plant Portrait Category: Photos must be of Indiana native plants only and may show leaves, flowers, or fruits of herbaceous or woody plants, including ferns. These may be “full plant” shots showing full form and stature, or close-ups of an inflorescence or single flower. Photos may be taken in either a natural setting or within a manmade, landscaped setting, providing they show Indiana native plants. The identity of the plant should be discernible from the photograph—thus no extreme close-ups or shots from so far away the plant cannot be identified. Both a botanical name and a common name of the plant should accompany the photograph.

Woody Natives Category: This new category is intended to encourage submission of photos of Indiana native trees and shrubs that can be used for the Indiana Native Plant Finder. Photos may depict the entire plant or some part of the plant, preferably that shows characters useful for species identification. As with the Plant Portrait category, photos should be accompanied by both the botanical name and common name of the species.

Deadline for Submission: Entries with file uploads must be submitted by August 31, 2023.

Permission and Photo Credits: By entering this contest, entrants agree to allow their photos to be used on the INPS website, in printed materials, in educational programs, and for other INPS purposes. The name of the photographer will be acknowledged with each use, and photographers will retain full rights to their images.

Prizes, Prizes

Contest entries will be judged by Greg Shaner and a team of INPS members, with attention to adherence to the category theme, composition, clarity, creativity, and aesthetic appeal.

First, second, and third place winners will be selected in each category, with cash prizes of \$75, \$50, and \$25.

Greg Shaner is secretary of INPS and chair of the Photo Contest Committee. He is a member of the West Central chapter.

2022 Category Winners:

Plant Portait

Consorting with Pollinators



First Place:
Yellow trout-lily
(*Erythronium americanum*)
by Kate Hart



Second Place:
Dutchman's breeches
(*Dicentra canadensis*)
by Suzanne Atkinson



Third Place:
Obedient plant (*Physostegia*
virginiana)
by Mary Doty



First Place:
Red admiral (*Vanessa*
atalanta) on *purple*
coneflower (*Echinacea*
purpurea)
by Christine Bushby



Second Place:
Eastern tiger swallowtail (*Papilio*
glaucus dark form) on *great blue*
lobelia (*Lobelia siphilitica*)
by Jeff Ludlow



Third Place:
Bee (*Apidae*) on *common*
sneezeweed (*Helenium*
autumnale)
by Stephanie Schuck

Native Plants and Me:

How did you first acquire a passion for native plants? Was it ignited by a 'spark' plant, one that brought an irresistible urge to learn more? Perhaps it came from a person, such as a parent or teacher sharing their knowledge of natives. Maybe it was while hiking in an amazing natural area and for the first time your eyes were opened to see the vast floral diversity that occurs there. Or possibly you observed a home garden full of colorful, beautiful natives. Whether it be by one of these aforementioned reasons, or a different one, you became impressed by native plants. This new series, *Native Plants and Me*, will be about INPS members and their personal journey with native plants. It begins with twin remembrances by our immediate-past INPS President Ellen Jacquart and the new INPS President, Coralie Palmer. Hope you enjoy!

[Michael Homoya, series coordinator]

From Golden Guide to INPS President

By Ellen Jacquart

How did I get interested in native plants? Well, I'm a bit of an introvert and I come from a big family, being the sixth out of eight kids. So, from an early age the quiet woods was my escape from a household full to the brim with people. Fortunately, I grew up in the time where kids could wander freely, and I took full advantage of that. Our backyard was paralleled by railroad tracks and those tracks led to a forest about one half mile from our house, on the property of the nearby power plant. Looking back, I know now it was a small and low-quality woods but it was a magical place to me. It was a swampy forest and had little water depressions full of bright red water mites and orange fairy shrimp in the spring before the woods dried up, and flowering understory plants to look at in the summer. By the time I was ten, I was spending a lot of time collecting those plants and pressing them and trying to ID them using the *Golden Guide to Wildflowers*. In ninth grade I remember bringing a bouquet of flowers from the woods to my biology class in which we were currently studying plants and naming them all for the class. I know I must have gotten some wrong – the *Golden Guide to Wildflowers* is a good starting point, but like many general guides it's missing some species and lists many species that may not be in your area – but the power of naming things stayed with me and made me want to know what EVERYTHING was in the woods. That curiosity is what started it all for me and keeps me going out to the woods after six decades. It does make me wonder, though, if I would have gotten that spark to learn more about plants if I hadn't been able to wander the woods by myself as a kid. I don't know, but I think that getting kids out in nature to play and look and learn might be incredibly important.

Ellen Jacquart, member of the INPS South Central Chapter, is the immediate Past-President of INPS.



Hank Huffman

Ellen Jacquart tending her Ellettsville wildflower garden.

Discovering the Joy

From English Transplant to Midwestern Native Plant Enthusiast

By Coralie Palmer

Plants have always been at the center of my world. I have gardened for as long as I can remember, studied botany, worked on wetland conservation in Asia, and spent happy hours in botanic gardens. My mother, Rosemary, was a wonderful gardener, and her passion and experience showed in the beautiful gardens of my childhood homes in England and India. Later, we were able to share this love, visiting Royal Horticultural Society shows together and exploring the wild, magical gardens in Cornwall where my parents settled. My English garden was my sanctuary.

Our move to the United States was an upheaval – initial loneliness heightened by the apparent hostility of an unfamiliar landscape; bitter winters where almost everything retreats underground; harsh summers that bake the soil and shrivel all but the most resilient plants. Add to that neighborhoods using seemingly endless chemicals, sterile immaculate lawns, leaf blowers; nature controlled and removed.

We moved to a house with a woodland garden. It had small sloping lawns; a few sterile beds with hostas (*Hosta* spp.) and daylilies (*Hemerocallis* sp.); a neglected woodland covered with invasive honeysuckle (*Lonicera* spp.), periwinkle (*Vinca minor*), and winter creeper (*Euonymus fortunei*); and barely any wildlife. Arriving after a summer of drought, my first attempts to grow familiar plants were laughable. The scented sweet peas (*Lathyrus odoratus*) quickly died. When winter came, the loss of green sent me into despair and I struggled to find the joy that a garden had always offered.

Then a new friend, Susan Conaway, gave me native plant transplants from her garden. A lovely neighbor, Sara Zeckel, showed me her glorious woodland plot. Elizabeth Mueller and Myrene Brown shared their commitment to creating wildlife habitat and, with Sara, invited me to join their garden club, sharing their deep knowledge of native plants and wealth of experience gardening in Indiana. Susan and Sara shared their beloved

southern Indiana cabins and their love of the Midwest landscapes they grew up in.

My directorship at the Indiana Wildlife Federation, with its focus on native plants, increased my understanding of the conservation challenges and opportunities in Indiana. Of course, the work of Doug Tallamy further linked conservation and gardening. And kind friends Ingrid Wiebke and Sarah Gray brought me into INPS, especially through an INPS pop-up tour of Sarah's stunning native garden.

I am thankful to be a part of this wonderful community, and for the role INPS has played in helping me lay down roots in a new home. And speaking of home, we've dug up our difficult, sloping areas of lawn and are filling them with an array of native plants. We're eradicating invasive plants and restoring our woodland. Our once dilapidated, sterile garden is full of color, teeming with wildlife, alive and inviting. Home at last!

Coralie Palmer, a member of the INPS Central Chapter and Landscaping with Natives Committee, is the new INPS President.



Coralie (right) with her late mother, Rosemary, at their beloved Trebah garden in Cornwall, England.

courtesy of Coralie Palmer

The Little Things That Run the World – Part I

In my article “Why Should We Care About Mitchell’s Satyr?” (Winter 2022-2023 issue of the *INPS Journal*), I cited the well-known scientist E.O. Wilson (2006), “More respect is due the little things that run the world.” Near the

end of the same article, I mentioned that I wanted to further explore why it matters that many species of plants and animals around the world are disappearing due to human actions. This article begins that discussion which will be continued in a future issue of the *Journal*.

In his book *The Creation*, Wilson wrote

that “Humanity doesn’t need a moon base or a manned trip to Mars. We need an expedition to planet Earth, where probably fewer than 10 percent of the life forms are known to science, and fewer than 1 percent of those have been studied beyond a simple anatomical description and a few notes on natural history.” This is at a time when many life scientists believe we are now in the early stages of the sixth great extinction of life forms on Earth, almost entirely caused directly or indirectly by human activities. Those of us who care about biodiversity find it disturbing that many species will be going extinct even before we know that they ever existed.

According to Wilson, insects comprise the greatest diversity of species among all organisms and the total number of known species in 2006 was around 900,000. However, he says that the true number, including those remaining to be discovered and classified, may exceed 10 million. Those who watch nature programs on TV and see all the amazing creatures on land and sea and marvel at the diversity probably assume that naturalists and scientists know everything there is to know about Earth and its inhabitants. The idea that

perhaps less than ten percent of Earth’s insect species are known simply in terms of classifying them as distinct species seems a bit shocking. And then consider the fact that for the ones that are not yet known to exist, it’s impossible to know what contributions they make to ecosystem function.

Wilson’s specialty was ants, and he postulated that at any given moment in time the weight of all ants in the world may be as much as the entire human population, which is now over eight billion people. And that’s just ants, a small fraction of the great number of insect species. Within the realm of scientific classification of organisms, insects are within the phylum known as arthropods. Besides insects, other arthropod kin include enormous numbers of other creatures (both number of species and total biomass) such as spiders, mites, millipedes, centipedes, and pillbugs.

Nematodes, members of another phylum, comprise another exceptionally large biomass of organisms. Of them, Wilson says, “. . . at the very apex, the amazing nematode worms, whose vast population swarms, probably representing millions of species, make up four-fifths of all animals on Earth. Can anyone believe that these little creatures are just there to fill space?”

In addition to the organisms already mentioned, there are enumerable additional small animals and plants from macroscopic to microscopic in size including undescribed species of violets (*Viola* spp.), mosses, lichens, fungi, bacteria, mycorrhizae, and the aquatic plants and animals known as phytoplankton and zooplankton. The life functions of these organisms vary widely but include producers, consumers, predators, parasites, and decomposers of all kinds, shapes, and sizes. A truism of ecological science is that ecosystem stability operates best through diversity and relationship complexity. They may not be readily visible to us, but taken as a whole, the little things comprise an enormous component of total life on Earth, and thus they likely are the most important strands in the web of life. Within the realm of their Lilliputian world, the most basic organic and inorganic elements are broken down into usable forms that tiny organisms utilize and bring into the flow of materials moving upward through never-ending

— continued at right



Paul Rothrock

The black field ant (Formica subsericea) would have been well-known to E. O. Wilson. This worker, attracted by a nutritious elaiosome, is carrying a seed of yellow trout-lily (Erythronium americanum) back to her nest – one example of the wonderful symbiotic interactions between species.

cycles of living and dying.

According to my old college ecology textbook (Odum 1959), the kinds of interactions between two species are defined and categorized into eight combinations depending on whether each organism is unaffected, benefited, or adversely affected by their association. The categories include neutralism, competition, mutualism, proto cooperation, commensalism, amensalism, parasitism, and predation. I won't describe each of these but will briefly mention mutualism as it relates to a specific case. We have learned in biology classes that lichens are a kind of composite organism that arises from an alga or cyanobacteria living among the filaments of fungi in a mutualistic relationship. It is a relationship in which growth and survival of both components is benefited and neither can survive under natural conditions without the other. This arrangement is also referred to as symbiosis. Unlike lichens, most interactions between two species are definitely not beneficial to both. Such an example is that of a hawk eating a vole where the hawk gains sustenance and the vole dies. Our planet is flush with winners and losers among life forms, yet when the entirety of Earth's ecological processes are considered, they comprise something akin to symbiosis even if that term doesn't fit from a technical definition standpoint. In his book *Flowering Earth*, Donald Culross Peattie (1991) describes it like this: "... if you look again at the fact of symbiosis you see that in principle it is universal. For all organisms are a part of the web; their underlying and vital relationships are one vast multiple symbiosis." To which E.O. Wilson might add, "run by little things."

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Lee Casebere, a member of the Central Chapter of INPS, is a naturalist, ecologist, nature photographer, and retired assistant director of IDNR's Division of Nature Preserves. He is a somewhat frequent contributor to this Journal.

at their entrance and around their retention pond, her accounts of which could be posted on the INPS website to guide others. When HOA politics did not work in her favor, Mary was determined that her work not go to waste and that others benefit from the native plants that were being removed, and gifted them to other projects.

She was indeed generous. We often received messages offering to share plants, such as beautiful maypop cuttings and extra vegetable starts. Coralie remembers Mary dropping by to bring saplings ordered from the Indiana State Nursery program—beautiful river birch and hazelnut—that she was sharing as widely as she could with community plantings. When plants were needed for the Eiteljorg and for a school project, Mary turned up with generous donations. Her texts and emails regularly shared environmental articles and photos and connected people she thought might get along and have interests in common.

As an INPS volunteer, Mary was a gift to us all, demonstrating the power of passion to do good with native plants and to grow lasting friendships in the process. We miss her enormously. She brought a wealth of knowledge and practical advice to the Landscaping with Natives team and cheered us with her sometimes amusing take on human nature.

Thanks to Mary, Sarah now knows maypop is not a frozen dessert but a passion-flower. What an apt plant to remember her by!



The pollinator garden at Broad Ripple Park, from Mary's video.

INPS members Brooke Alford, Wendy Ford, Sarah Gray, and Coralie Palmer shared their memories of Mary as the basis for this article. To see Mary's video for Friends of Broad Ripple Park, visit the INPS YouTube channel.

INPS Central Chapter has donated in Mary's memory to the "Bloom Where You Are Planted Fund" through Friends of the White River. Per Mary's wishes, the Friends have set up this fund specifically to support additional Stream Stewards projects benefiting Marott Island and the White River. <https://friendsofwhiteriver.org/2022/12/bloom-where-you-are-planted/>



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In Memoriam Mary Durkin: A Passionate Do-er



Mary Eileen Durkin, December 1946 – December 2022, at the pollinator garden, from her video for Friends of Broad Ripple Park.

INPS member and volunteer Mary Durkin passed away on December 21, 2022, four weeks after being diagnosed with stomach cancer. Members of the Landscaping with Natives team and Central Chapter leadership offer this tribute to their good friend.

Many of us came to know Mary Durkin in the spring of 2020 through the newly constituted INPS Landscaping with Natives team. Team leader Coralie Palmer recalls weekly initial meetings through those first months of COVID when we were all learning how to Zoom and how to cope in a pandemic. Connecting with like-minded friends to talk about native plants was a joy, says Coralie, and Mary was right there at the heart of it. Those lovely regular long chats, brightened by Mary's warmth, humor, witty and wry take on the upside-down political situation, constant enthusiasm, and breadth of knowledge were a true bright spot and the basis of cherished friendships.

A longtime member and advocate for the Indiana Native Plant Society, Mary was passionate about the natural world. But more than that, Sarah Gray notes, Mary was a do-er. She led and contributed to countless projects aiming to make a healthier planet and provide for our wildlife. Her commitment to the ongoing

success and power of native plantings in public spaces was especially inspiring. She got out into the community and showed what could be done even on a small scale.

Mary helped install two native plantings at the Eiteljorg Museum [see Winter 2021-2022 and Spring 2022 issues of the *INPS Journal*] and was a key figure in maintaining the gardens with the help of her Master Gardener friends. At Broad Ripple Park, her Friends group planted and maintained a long border of pollinator-friendly natives for all to see and admire, and Mary narrated a video to go with it, explaining the crucial role of native plants in the web of life.

Brooke Alford recalls Mary's equal passion for justice and equity, which inspired our DEIJ book club, and inspired us all to do good work, with a kind heart, inclusively, meeting our communities where they are. When the Society of St. Vincent de Paul renovated its Boulevard Place Food Pantry, Mary spearheaded a plan to beautify the surroundings with native plantings, and even a week before her death, she was enlisting Coralie to continue the nature experiences she had hosted at Broad Ripple Park for Camptown kids.

Wendy Ford especially appreciated Mary's efforts to work with her Spirit Lake condominium association to install native plantings

Durkin — continued on page 15